§ 175.320

Rinsing equipment, soda fountain pressure-type hot water, consisting in simplest form of a ½-inch-¼-inch inside diameter metal tube attached to a hot water line delivering 190 °F-200 °F water and bent so as to direct a stream of water upward.

Pressure cooker, 21-quart capacity with pressure gage, safety release, and removable rack, 12.5 inches inside diameter \times 11 inches inside height, 20 pounds per square inch safe operating pressure.

Oven, mechanical convection, range to include 120 °F–212 °F explosion-proof, inside dimensions (minimum), 19" \times 19" \times 19", constant temperature to ± 2 °F (water bath may be substituted).

Incubator, inside dimensions (minimum) $19'' \times 19'' \times 19''$ for use at $100~^\circ\text{F}\pm2~^\circ\text{F}$ explosion proof (water bath may be substituted).

Constant-temperature room or chamber 70 °F±2 °F minimum inside dimensions 19" × 19" × 19"

Hot plate, nonsparking (explosion proof), top $12^{\prime\prime}\times20^{\prime\prime}$, 2,500 watts, with temperature control.

Platinum dish, 100-milliliter capacity minimum.

All glass, Pyrex or equivalent.

(2) Reagents.

Water, all water used in extraction procedure should be freshly demineralized (deionized) distilled water.

Heptane, reagent grade, freshly redistilled before use, using only material boiling at 208 °F

Alcohol, 8 percent (by volume), prepared from undenatured 95 percent ethyl alcohol diluted with demineralized or distilled water.

Chloroform, reagent grade, freshly redistilled before use, or a grade having an established, consistently low blank.

Filter paper, Whatman No. 41 or equivalent.

(g) In accordance with good manufacturing practice, finished coatings intended for repeated food-contact use

shall be thoroughly cleansed prior to their first use in contact with food.

(h) Acrylonitrile copolymers identified in this section shall comply with the provisions of §180.22 of this chapter.

[42 FR 14534, Mar. 15, 1977]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §175.300, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§175.320 Resinous and polymeric coatings for polyolefin films.

Resinous and polymeric coatings may be safely used as the food-contact surface of articles intended for use in producing, manufacturing, packing, processing, preparing, treating, packaging, transporting, or holding food, in accordance with the following prescribed conditions:

(a) The coating is applied as a continuous film over one or both sides of a base film produced from one or more of the basic olefin polymers complying with §177.1520 of this chapter. The base polyolefin film may contain optional adjuvant substances permitted for use in polyolefin film by applicable regulations in parts 170 through 189 of this chapter.

(b) The coatings are formulated from optional substances which are:

(1) Substances generally recognized as safe for use in or on food.

(2) Substances the use of which is permitted under applicable regulations in parts 170 through 189 of this chapter, by prior sanctions, or approvals.

(3) Substances identified in this paragraph (b)(3) and subject to such limitations as are provided:

| - | - |
|--|---|
| List of substances | Limitations |
| (i) Resins and polymers: Acrylic acid polymer and its ethyl or methyl esters. Acrylamide copolymerized with ethyl acrylate and/or styrene and/or methacrylic acid, and the copolymer subsequently reacted with formaldehyde and butanol. Butadiene-acrylonitrile-styrene terpolymer. Butadiene-acrylonitrile-styrene terpolymer. Butyl rubber. N,N'-Diphenyl-p-phenylenediamine 2-Ethylhexyl acrylate copolymerized with one or more of the following: Acrylonitrile. Itaconic acid. Methacrylonitrile. Methyl acrylate. Methyl methacrylate. | For use only as a polymerization inhibitor in 2-sulfoethyl methacrylate, sodium salt. |

| List of substances | Limitations |
|---|--|
| 4,4'-Isopropylidenediphenolepichlorohydrin average molecular weight 900. | |
| Melamine-formaldehyde as the basic polymer or chemi- | |
| cally modified with methyl alcohol. | |
| Methacrylic acid and its ethyl or methyl esters copolym- | |
| erized with one or more of the following: Acrylic acid. | |
| Ethyl acrylate. | |
| Methyl acrylate. | |
| α-Methyl styrene polymer. | |
| $\alpha\text{-Methylstyrene-vinyltoluene}$ copolymer resins (molar ratio 1 $\alpha\text{-methylstyrene}$ to 3 vinyltoluene). | For use only in coatings that contact food under conditions use D, E, F, or G described in Table 2 of §176.170(c) of the chapter, provided that the concentration of α -methylstyren vinyltoluene copolymer resins in the finished food-contact coating does not exceed 1.0 milligram per square inch food-contact surface. |
| Petroleum alicyclic hydrocarbon resins | As defined in § 176.170 of this chapter. Blended with butyl ruber for use as a component of coatings on polyolefin fab for bulk packaging of raw fruits and vegetables and used a level not to exceed 30 percent by weight of the total coating the coating part of the total coating the coating part of the coat |
| Polyamide resins (CAS Reg. No. 68139-70-8), as the | ing solids. For use only in coatings for polypropylene films that conta |
| basic resin, derived from: Dimerized vegetable oil or tall oil acids containing not more than 20 percent of monomer acids. Azelaic acid (CAS Reg. No. 123–99–9) in an amount | food at temperatures not to exceed room temperature. |
| not to exceed 3.7 percent by weight of the polyamide resin. | |
| Ethylenediamine (CAS Reg. No. 107–15–3). Piperazine (CAS Reg. No. 110–85–0) in an amount | |
| not to exceed 6.4 percent by weight of the poly- | |
| amide resin. | |
| Polyamide resins, derived from dimerized vegetable oil | For use only in coatings for polyolefin films that contact food |
| acids (containing not more than 20% of monomer acids) and ethylenediamine, as the basic resin. | temperatures not to exceed room temperature. |
| Polyamide resins having a maximum acid value of 5 and a | For use only in coatings that contact food at temperatures n |
| maximum amine value of 8.5 derived from dimerized vegetable oil acids (containing not more than 10 percent of monomer acids), ethylenediamine, and 4,4-bis (4-hydroxyphenyl) pentanoic acids (in an amount not to ex- | to exceed room temperature provided that the concentration of the polyamide resins in the finished food-contact coatin does not exceed 5 milligrams per square inch of food-cotact surface. |
| ceed 10 percent by weight of said polyamide resins); as the basic resin. | |
| Polyester resins formed by reaction of one or more of the | |
| following polybasic acids and monobasic acids with one or more of the following polyhydric alcohols: Polybasic acids: Adipic. | |
| Azelaic | For use in forming polyester resins intended for use in coa |
| | ings that contact food only of the type identified §176.170(c) of this chapter, Table 1, under Category VI and under conditions of use E, F, or G, described in Table of §176.170(c) of this chapter. |
| Dimerized fatty acids derived from: | |
| Animal, marine or vegetable fats and oils. | |
| Tall oil. Fumaric. | |
| Isophthalic. | |
| Maleic. | |
| o-Phthalic. | |
| Sebacic. | |
| Terenhthalic | |
| Terephthalic. Trimellitic. | |
| | |
| Trimellitic. Monobasic acids: Fatty acids derived from: | |
| Trimellitic. Monobasic acids: Fatty acids derived from: Animal, marine, or vegetable fats and oils. | As defined in \$470,0070 of this shorter Forms 1.4. |
| Trimellitic. Monobasic acids: Fatty acids derived from: | polyester resins intended for use in coatings that conta food only of the type identified in §176.170(c) of this cha ter, Table 1, under Category VIII, and under conditions use E, F, or G described in Table 2 of §176.170(c) of the |
| Trimellitic. Monobasic acids: Fatty acids derived from: Animal, marine, or vegetable fats and oils. Gum rosin | As defined in §178.3870 of this chapter. For use in forming polyester resins intended for use in coatings that contains food only of the type identified in §176.170(c) of this chater, Table 1, under Category VIII, and under conditions use E, F, or G described in Table 2 of §176.170(c) of the chapter. |
| Trimellitic. Monobasic acids: Fatty acids derived from: Animal, marine, or vegetable fats and oils. | polyester resins intended for use in coatings that conta food only of the type identified in §176.170(c) of this cha ter, Table 1, under Category VIII, and under conditions use E, F, or G described in Table 2 of §176.170(c) of the |

§ 175.320

| List of substances | Limitations |
|--|--|
| 2,2-Dimethyl-1,3-propanediol. Dipropylene glycol. Ethylene glycol. Glycerol. Mannitol. α-Methyl glucoside. Pentaerythritol. Propylene glycol. Sorbitol. | |
| Trimethylol ethane. | |
| Trimethylol propane. Polyethylenimine | For use only as a primer subcoat to anchor epoxy surface coatings to the base sheet. |
| Polystyrene. Polyvinyl acetate. Polyvinyl chloride | Platinum content not to exceed 100 parts per million. For use only as a surface coating under the following conditions: 1. In coatings for olefin polymers provided the coating contacts for the following contacts are supported to the following contacts. |
| polysiloxane (CAS Reg. No. 63148–57–2). Dimethyl maleate (CAS Reg. No. 624–48–6) and vinyl acetate (CAS Reg. No. 108–05–4) may be used as optional polymerization inhibitors | food only of the types identified in §176.170(c) of this chapter, Table 1, under Types I, II, VI, and VII–B when used under conditions of use E, F, and G described in Table 2 in §176.170(c) of this chapter. 2. In coatings for olefin polymers provided the coating contacts food only of the types identified in §176.170(c) of this chapter, Table 1, under Types III, IV, V, VII–A, VIII, and IX when used under conditions of use A through H described in Table 2 in §176.170(c) of this chapter. |
| Siloxanes and silicones; platinum-catalyzed reaction product of vinyl-containing dimethylpolysiloxane (CAS Reg. Nos. 68083–19–2 and 68083–18–1), with methyl hydrogen polysiloxane (CAS Reg. No. 63148–57–2). Dimethyl maleate (CAS Reg. No. 624–48–6), vinyl acetate (CAS Reg. No. 108–05–4), dibutyl maleate (CAS Reg. No. 105–76–0) and diallyl maleate (CAS Reg. No. 999–21–3) may be used as optional polymerization inhibitors. The polymer may also contain C ₁₀ –C ₁₈ olefins (CAS Reg. No. 68855–60–7) as a control release agent Styrene copolymerized with one or more of the following: Acrylonitrile. α-Methyl styrene. | Platinum content not to exceed 100 parts per million. For use only as a release coating for pressure sensitive adhesives. |
| Styrene polymers made by the polymerization of any combination of styrene or alpha methyl styrene with acrylic acid, methacrylic acid, 2-ethyl hexyl acrylate, methyl methacrylate, and butyl acrylate. The styrene and alpha methyl styrene, individually, may constitute from 0 to 80 weight percent of the polymer. The other monomers, individually, may be from 0 to 40 weight percent of the polymer. The polymer number average molecular weight (M _n) shall be at least 2,000 (as determined by gel permeation chromatography). The acid number of the polymer shall be less than 250. The monomer content shall be less than 0.5 percent. | For use only in contact with foods of Types IV-A, V, and VII in table 1 of §176.170(c) of this chapter, under use conditions E through G in table 2 of §176.170(c), and with foods of Types VIII and IX without use temperature restriction. |
| Styrene-isobutylene copolymer. Terpene resins consisting of polymers of α-pinene, β-pinene, and/or dipentene; acid value less than 5, saponification number less than 5, and color less than 4 on the Gardner scale as measured in 50 percent mineral spirits solution. 2-Sulfoethyl metacrylate, sodium salt Chemical Abstracts | For use only in copolymer coatings under conditions of use E, |
| Service No. 1804–87–1]. Vinyl chloride-acetate, hydroxyl-modified copolymer or maleic acid-modified copolymer. Vinyl chloride copolymerized with one or more of the following: Acrylonitrile. Vinyl acetate. Vinylidene chloride. Vinylidene chloride copolymerized with one or more of the | F, and G described in Table 2 of § 176.170(c) of this chapter and limited to use at a level not to exceed 2.0 percent by weight of the dry copolymer coating. |
| following: Acrylic acid and its methyl, ethyl, propyl, butyl, or octyl esters. | |

| List of substances | Limitations |
|---|--|
| Acrylonitrile. Itaconic acid. Methacrylic acid and its methyl, ethyl, propyl, butyl, or octyl esters. Methacrylonitrile. Vinyl chloride. (ii) Plasticizers: Acetyl tributyl citrate. Acetyl tributyl citrate. Butyl phthalyl butyl glycolate. Butyl stearate. Dibutyl sebacate. Diethyl phthalyl ethyl glycolate. Ethyl phthalyl ethyl glycolate. Glycerol monooleate Glycerol triacetate. Triethyl citrate. (iii) Adjuvants (release agents, waxes, and dispersants): Acetone. Amides (unsubstituted) of fatty acids from vegetable or animal oils. n-Butyl acetate. n-Butyl alcohol. Candelilla wax. Carnauba wax. Ethyl acetate. Fatty acids from vegetable or animal oils and their aluminum, ammonium, calcium, magnesium, and sodium salts. Hexane. Methyl ethyl ketone. N,N'-Dioleoylethylenediamine (CAS Reg. No. 110–31–6) | For use only in ionomeric resins complying with §177.1330 of this chapter and in ethylene vinyl acetate copolymers complying with §177.1350 of this chapter at a level not to ex- |
| Petroleum waxes conforming to specifications included in a regulation in subchapter B of this chapter. Polyvinyl alcohol, minimum viscosity of 4% aqueous solution at 20 °C of 4 centipoises and percent alcoholysis of 87–100. | plying with §177.1350 of this chapter at a level not to exceed 0.0085 milligram per square centimeter (0.055 milligram per square inch) in the finished food-contact article. For use only as a dispersing agent at levels not to exceed 6% of total coating weight in coatings for pol-yolefin films provided the finished polyolefin films contact food only of the |
| Sodium dioctyl sulfosuccinate. Sodium dodecylbenzenesulfonate. Sodium lauryl sulfate. Sorbitan and sorbitol esters of fatty acids from vegetable or animal oils. Spermaceti wax. Tetrahydrofuran. Toluene. | types identified in §176.170(c) of this chapter, Table 1, under Types V, VIII, and IX. |

(c) The coating in the finished form in which it is to contact food, when extracted with the solvent or solvents characterizing the type of food, and under conditions of time and temperature characterizing the conditions of its intended use as determined from Tables 1 and 2 of §176.17(c) of this chapter, shall yield net chloroform-soluble extractives not to exceed 0.5 milligram per square inch of coated surface.

(d) Acrylonitrile copolymers identified in this section shall comply with

the provisions of §180.22 of this chapter.

[42 FR 14534, Mar. 15, 1977, as amended at 43 FR 7206, Feb. 21, 1978; 45 FR 6541, Jan. 29, 1980; 47 FR 22512, May 25, 1982; 49 FR 36497, Sept. 18, 1984; 50 FR 47209, Nov. 15, 1985; 56 FR 49674, Oct. 1, 1991; 61 FR 14246, Apr. 1, 1996]

§175.350 Vinyl acetate/crotonic acid copolymer.

A copolymer of vinyl acetate and crotonic acid may be safely used as a coating or as a component of a coating which is the food-contact surface of